Packet-Radio Digest   Sun, 11 Apr 93   Volume 93 : Issue   96

Today's Topics:
                       Cable TVI interference
                Can BayCom save Monitor Window data?
     Possible to convert scanner to RO packet station? (2 msgs)
     Request: Modification instructions for Radio Shack HTX-202.
                 Rich Man's Packet ... : -) (2 msgs)
                        STS-56 SAREX active
                        STS-56 SAREX active!

We trust that readers are intelligent enough to realize that all text
herein consists of personal comments and does not represent the official
policies or positions of any party. Your mileage may vary. So there.

Date: 11 Apr 93 03:49:18 GMT
From: usc!zaphod.mps.ohio-state.edu!ub!dsinc!wells!edw@network.UCSD.EDU
Subject: Cable TVI interference
To: packet-radio@ucsd.edu

  I have a friend that runs some packet BBS programs in the Philadelphia
area. Just recently, the cable company stopped by to identify that he
has been interferring with Channel 18 cable TV. This happens to be the
fundamental frequency for the entire 2 meter band. Although the cable
company acknowledges that he is completely within the legal limits, he
expects that the cable company is getting ready to finger him with his
neighbors and start a neighbor-to-neighbor war. The actually problem
area seems to be confined to within about 500 to 1000 ft (just a few
city blocks from his transmitter). Supposably, the FCC has already been
contacted, however, he hasn't seen or heard from any FCC officals
yet.

Supposably, the problem has been getting worse, he hasn't changed
anything in over a year. I figure that the only way the problem is
getting worse is that the cable is degrading, and his packet activity
is keeping the packet transmitters on more often. Some of the cable
ready televisions may also not have the proper shielding also internally
and accepting some of the signal directly.

   It seems to me that the cable TV industry decided to use the same
frequencies in the cable that are used as many other ham and/or commercial
frequencies outside the cable, and now that leakage/acceptance is occuring,
they don't know how to deal with the monster they've created,
or their irate customers (who probably are demanding refunds).

   Has anyone else around the country had a problem like this? If so,
please send me some mail (not netnews) about what you had to do to resolve
this. The more detail you put in your reply, the more I'll be interested
in reading it and passing this on to others that may also benefit by
it.

   Thanks.
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===
Edward E. Wells Jr., N3IAS, President   Voice: (215)-943-6061
Wells Computer Systems Corp., Box 343, Levittown, Pa. 19058
{wells.com,dsi.com,dsinc,bcccix,francis}!wells!edw

----

dfk@col.hp.com (David F. Kurth) writes:
> Has anybody with a BayCom modem been able to monitor
> packets from a station, and store that info to a file?

I thought I'd summarize the answers I'd received, one even
from one of the authors of Baycom which is copied below...
----

just get to the F10-Screen, type :W <Filename> and all the stuff coming
on the monitor screen is transferred into the file.
If you want to print them: Just type :W prn.

Best regards

Johannes Kneip, DG3RBU
BayCom-Team

Thanks for all your help
Dave

Date: Sun, 11 Apr 1993 01:01:33 GMT
From: usc!howland.reston.ans.net!gatech!kd4nc!ke4zv!gary@network.UCSD.EDU
Subject: Possible to convert scanner to RO packet station?
To: packet-radio@ucsd.edu

In article <C58CLu.9B2@panix.com> msiso@panix.com (Michael Sisolak) writes:
>   I'm intersted in getting into packet radio but am afraid of the cost
>and jumping right in. I curently own a scanner (of the handheld style) and
>was thinking that there must be some way to hook up the scanner to a PMP
>kinda deal to be able to recieve and watch the packet channels. I can do my
>own electronic work and would be willing to do scanner mods. Basically I'm
>looking for the cheapest way to convert a scanner to read only packet on my
>PC. Is there any hope?

Sure. Just lock the scanner on the packet frequency and connect an audio
cable from it's earphone jack to the TNC and you're done. The RF performance
of scanners is poor compared to good ham equipment, but it should be
adequate to monitor local activity. If you can hear packet, a TNC is
likely to be able to decode it.

Gary
--
Gary Coffman KE4ZV | You make it, | gatech!wa4mei!ke4zv!gary
Destructive Testing Systems | we break it. | uunet!rsiatl!ke4zv!gary
534 Shannon Way | Guaranteed! | emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244 | |

Date: Sun, 11 Apr 1993 03:24:09 GMT
From: usc!zaphod.mps.ohio-state.edu!magnus.acs.ohio-state.edu!csn!boulder!ucsu!
spot.Colorado.EDU!weaverb@network.UCSD.EDU
Subject: Possible to convert scanner to RO packet station?
To: packet-radio@ucsd.edu

gary@ke4zv.uucp (Gary Coffman) writes:

>Sure. Just lock the scanner on the packet frequency and connect an audio
>cable from it's earphone jack to the TNC and you're done. The RF performance
>of scanners is poor compared to good ham equipment, but it should be
>adequate to monitor local activity. If you can hear packet, a TNC is
>likely to be able to decode it.

Yup, this works fine. We were doing it yesterday actually. There is
no reason why you'd have to modify the scanner at all, just hook it
up.

-- Brian

--
Brian Weaver (303)786-0021   University of Colorado at Boulder
weaverb@boulder.Colorado.EDU   (internet)
KD6CFA@N0ARY.#NOCAL.CA.USA.NA   (packet radio)
PGP Public key available via finger or request.

Date: 10 Apr 93 15:41:39 GMT
From: mcdhup!src4src!sss@rutgers.rutgers.edu
Subject: Request: Modification instructions for Radio Shack HTX-202.
To: packet-radio@ucsd.edu

>> He currently has a Radio Shack HTX-202, 2-meter radio and was looking to
>> make modifications. If anyone has any instructions for modifying the
>
>There are *NO MODS* for the HTX-202, the previous mentions of mods were
>proven to be false. A friend of mine is a technician for Tandy service

  This is true. In fact, the was a 'false mod' that would supposedly increse
  the receive frequency range that would actually trash your receive
  circuits. Do NOT try any mods that you see, unless you can afford a new
  radio.

  73 de N2TQZ
--
Steven S. Spiroff	
sss@n2tqz.linet.org	This space for rent..
Long Island PubNet Project	

Date: Sat, 10 Apr 1993 21:19:00 GMT
From: usc!cs.utexas.edu!utnut!nott!cunews!news@network.UCSD.EDU
Subject: Rich Man's Packet ... : -)

To: packet-radio@ucsd.edu

As another member of the ever-present Ottawa group that built
and put on the air a 56 kbps GRAPES modem, I'll also concur
that getting on 56k isn't that difficult. The modem is
easy, and can be done, without a 'scope if you have to.

I built my modem at home and then did the final alignment
on the bench at work (really needed very few tweaks
on the bench with the scope).

The transverters were another matter, but being the last one
to join the group I had little choice on the band to operate on
and had a great deal of difficulty finding a transverter that
worked. Once I did I was on the air in about 5 min.

I would suggest that anyone getting into the 56k game pick
a band(s) where there is readily available equipment (unless
you *really* want to build your own convertors).

No it's not quite "plug-and-play", but the documentation is
good, and there are lots of experts (now) on the net.

Ian

--
Ian A. McEachern, VE3PFH | This space for rent.
Packet Working Group, Ottawa A.R.C. |
im@hydra.carleton.ca |
ian@ve3pfh.ampr.org |

Date: Sun, 11 Apr 1993 00:54:02 GMT
From: usc!howland.reston.ans.net!gatech!kd4nc!ke4zv!gary@network.UCSD.EDU
Subject: Rich Man's Packet ... : -)
To: packet-radio@ucsd.edu

In article <1993Apr09.145903.49266@watson.ibm.com> kf5mg@vnet.ibm.com (Jack
Snodgrass) writes:
>   Can someone with some VHF radio design knowledge explain what's so
>hard/expensive in designing a high-speed capable radio? To go at 9600B
>and higher, you have to bypass a lot of circuitry that is used for
>voice communications and can't be used for packet. How come it seems
>like its more expensive to not include the voice stuff, than it is to
>include the voice circuitry? Why can't we design a $50 high speed packet
>rig? If this is an ignorant question, please enlighten me.

The tricky part is to get a phase linear IF filter for the required
bandwidth. That was the most difficult part of the GRAPES modem
design. You need a filter that is very phase linear across it's passband,
but that has very good adjacent channel rejection. A data radio is
different from a voice radio. The non-linearities that don't matter
for narrow voice signals can really screw up data transmissions.

Other critical areas are the slicer, which has to deal with off
frequency signals, and the scrambler that removes any DC component
to the modulation. A DC component can corrupt data slicing at the
receiver by effectively shifting the transmit center frequency.

A high speed data radio for packet also has to have very quick TR
time or much of the channel time will be wasted waiting for transmitter
and receiver to settle. With radios using a single synthesizer, this
is very tough to do. With crystal controlled radios it's much easier,
but there are still subtle problems to be overcome. The best approach,
and the one GRAPES chose, is to use totally separate transmit and
receive strips that always run. Then the only TR timing involved
is in switching the antenna. PIN switches can do that rapidly.

Gary

--
Gary Coffman KE4ZV | You make it, | gatech!wa4mei!ke4zv!gary
Destructive Testing Systems | we break it. | uunet!rsiatl!ke4zv!gary
534 Shannon Way | Guaranteed! | emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244 | |

Date: Sat, 10 Apr 93 17:08:51 GMT
From: netcomsv!orchard.la.locus.com!prodnet.la.locus.com!lando.la.locus.com!
dana@decwrl.dec.com
Subject: STS-56 SAREX active
To: packet-radio@ucsd.edu

I monitored STS-56 SAREX today (4/10/93) at 1545 UTC. This is the
first pass I've listened to where SAREX was active. The QSO numbers
I saw started below 100 (95 or so). This would appear to indicate that
the experiment was turned on shortly before the pass, possibly
around 1500-1530 UTC.

No luck getting the QSO this time; I got the connection UA,
but the bird fell below the horizon before I could establish
the QSO #.

Good luck!

Dana

--
 * Dana H. Myers KK6JQ | Views expressed here are *
 * (310) 337-5136 | mine and do not necessarily   *
 * dana@locus.com DoD #466 | reflect those of my employer
     *
 * This Extra supports the abolition of the 13 and 20 WPM tests *

Date: Sat, 10 Apr 93 17:58:40 GMT
From: netcomsv!orchard.la.locus.com!prodnet.la.locus.com!atlas.la.locus.com!
dana@decwrl.dec.com
Subject: STS-56 SAREX active!
To: packet-radio@ucsd.edu

I monitored STS-56 SAREX today (4/10/93) at 1645 UTC. This is the
first pass I've listened to where SAREX was active. The QSO numbers
I saw started below 100 (95 or so). This would appear to indicate that
the experiment was turned on shortly before the pass, possibly
around 1600-1630 UTC.

No luck getting the QSO this time; I got the connection UA,
but the bird fell below the horizon before I could establish
the QSO #.

Good luck!

Dana
--
 * Dana H. Myers KK6JQ | Views expressed here are *
 * (310) 337-5136 | mine and do not necessarily   *
 * dana@locus.com DoD #466 | reflect those of my employer
     *
 * This Extra supports the abolition of the 13 and 20 WPM tests *

Date: Sun, 11 Apr 1993 00:41:27 GMT
From: usc!howland.reston.ans.net!gatech!kd4nc!ke4zv!gary@network.UCSD.EDU
To: packet-radio@ucsd.edu

References <6977@bacon.IMSI.COM>, <1993Apr8.075140.2001@ke4zv.uucp>,
<1993Apr8.175510.48991@kuhub.cc.ukans.edu>
Reply-To : gary@ke4zv.UUCP (Gary Coffman)

Subject : Re: Rich Man's Packet ... : -)

In article <1993Apr8.175510.48991@kuhub.cc.ukans.edu> whitten@kuhub.cc.ukans.edu
writes:
>In article <1993Apr8.075140.2001@ke4zv.uucp>, gary@ke4zv.uucp (Gary Coffman)
writes:
>>
>> You need a GRAPES 56 kb RF modem and a transverter. The modem is an
>> RF design using MSK that outputs on 29 MHz. You use a transverter
>> to kick that to the UHF band of choice. Occupied bandwidth at 56 kb
>> is 70 kHz. There are 100 kHz wide channels on 222 and 440 in the
>
>I had the same question as the original poster, but after reading
>about the GRAPES modems, I don't think they're really for anyone
>except those interested in tinkering and designing the modems.
>I think it was ve3jf's article that described all the problems
>in finding suitable transverters, the need to build/buy/find
>bandpass filters for the front of these, the susceptibility
>of the transverters to noise from other nearby equipment, ect, ect.

It's not that bad. The GRAPES modem is a kit, and you do need access
to a dual channel scope capable of XY display up to 100 kHz to tune
it up. But it's not tricky. You diddle three pots to get a symetric
circle with inscribed square display. Once it's set, it's very stable.

You do have to supply your own case, power supply, and transverter.
I use standard LMB boxes for cases, small cheap +/- 5 volt switching
power supplies are available at nearly any surplus outlet, and
transverters are still available from a couple of sources. We're
still finding Microwave Modules units at hamfests though new units
are unavailable because they went belly up. Sinclabs quit making
their copy of the MM units also. But, the new Down East Microwave
units work, and so do the SSB Electronics units. Any linear tranverter
you can find can be hacked to work, or you can build the one described
in a recent QST. Filters are only an issue if your transverter is
very broad and if it is located at a high RF site like a mountaintop
repeater location. For home use we've never needed any extra filtering.

The modem was designed to be as flexible as possible. The transmit
and receive sections are totally separate in order to allow split
site or full duplex usage. That's why we don't include a standard
case or power supply. Note that the modem is a MSK synchronous
modem operating at RF for minimum bandwidth consumption. It isn't
only for packet. We've used them to transmit digitally encoded voice
and telemetry streams as well as using them for packet. The RF
frequency was chosen to be compatible with the largest number of
transverters so you can put the final output on any band where
the speed is allowed. We've tested them on 222, 440, 902, and 1296

with various transverters.

>The fastest "off the shelf" solution I've been able to locate are
>the Kantronics UHF data radios which do 19.2k. Clearly not
>56k, but you can buy all the pieces complete and you don't
>have to have a bench full of test equipment to get it working. ;)

Yes, the D4 is an off the shelf solution, but it consumes more
bandwidth per baud since it's direct FSK, and has poorer weak signal
and drifting signal performance than the GRAPES unit. The GRAPES modem
can track signals +/- 5 kHz with no degradation in performance, and
can track out to +/- 20 kHz before significant impairment of performance
occurs. This is because of it's unique tracking data detector design.
The D4 is factory built, but you still need a UHF service monitor to put
it on channel. You can set the GRAPES unit with a 10 meter receiver.

Gary
--
Gary Coffman KE4ZV | You make it, | gatech!wa4mei!ke4zv!gary
Destructive Testing Systems | we break it. | uunet!rsiatl!ke4zv!gary
534 Shannon Way | Guaranteed! | emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244 | |

End of Packet-Radio Digest V93 #96
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